

Claims

1. An isolated essentially mammalian positive-sense single stranded RNA virus (EMCR-CoV) comprising the sequence of figure 1 or homologues thereof.

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2. An isolated positive-sense single stranded RNA virus (EMCR-CoV) belonging to the Coronaviruses and identifiable as phylogenetically corresponding thereto by determining a nucleic acid sequence of said virus and testing it in phylogenetic tree analyses wherein maximum likelihood trees are generated using 100 bootstraps and 3 jumbles and finding it to be more closely phylogenetically corresponding to a virus isolate having the sequences as depicted in figure 1 than it is corresponding to a virus isolate of PEDV (porcine epidemic diarrhea virus), HCoV-229E (human coronavirus 229E), PRCoV (porcine respiratory coronavirus), TGEV (transmissible gastroenteritis virus), CaCoV (Canine coronavirus) and FeCoV (feline coronavirus).

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3. A virus according to claim 1 or 2 wherein said nucleic acid sequence comprises an open reading frame (ORF) encoding a viral protein of said virus.

4. A virus according to claim 3 wherein said open reading frame is selected from the group of ORFs encoding the viral replicase, nuclear capsid protein, matrix protein and the spike protein.

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5. A virus according to claim 1-4 isolatable from a human with atypical pneumonia.

6. An isolated or recombinant nucleic acid or EMCR-CoV virus-specific functional fragment thereof obtainable from a virus according to anyone of claims 1 to 5.

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7. A vector comprising a nucleic acid according to claim 6.

8. A host cell comprising a nucleic acid according to claim 6 or a vector according to claim 7.

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9. An isolated or recombinant proteinaceous molecule or EMCR-CoV virus-specific functional fragment thereof encoded by a nucleic acid according to claim 6.

10. An antigen comprising a proteinaceous molecule or EMCR-CoV virus-specific functional fragment thereof according to claim 9.

5 11. An antibody specifically directed against an antigen according to claim 10.

12. A method for identifying a viral isolate as an EMCR-CoV virus comprising reacting said viral isolate or a component thereof with an antibody according to claim 11.

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13. A method for identifying a viral isolate as an EMCR-CoV virus comprising reacting said viral isolate or a component thereof with a nucleic acid according to claim 6.

15 14. A method for virologically diagnosing an EMCR-CoV infection of a mammal comprising determining in a sample of said mammal the presence of a viral isolate or component thereof by reacting said sample with a nucleic acid according to claim 6 or an antibody according to claim 11.

20 15. A method for serologically diagnosing an EMCR-CoV infection of a mammal comprising determining in a sample of said mammal the presence of an antibody specifically directed against an EMCR-CoV virus or component thereof by reacting said sample with a proteinaceous molecule or fragment thereof according to claim 9 or an antigen according to claim 10.

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16. A diagnostic kit for diagnosing an EMCR-CoV infection comprising a virus according to anyone of claims 1 to 5, a nucleic acid according to claim 6, a proteinaceous molecule or fragment thereof according to claim 9, an antigen according to claim 10 and/or an antibody according to claim 11.

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17. Use of a virus according to any one claims 1 to 5, a nucleic acid according to claim 6, a vector according to claim 7, a host cell according to claim 8, a proteinaceous molecule or fragment thereof according to claim 9, an antigen according to claim 10, or an antibody according to claim 11 for the production of a pharmaceutical composition.

18. Use according to claim 17 for the production of a pharmaceutical composition for the treatment or prevention of an EMCR-CoV virus infection.
- 5 19. Use according to claim 17 or 18 for the production of a pharmaceutical composition for the treatment or prevention of atypical pneumonia.
20. A pharmaceutical composition comprising a virus according to any one of claims 1 to 5, a nucleic acid according to claim 6, a vector according to claim 7, a host cell
10 according to claim 8, a proteinaceous molecule or fragment thereof according to claim 9, an antigen according to claim 10, or an antibody according to claim 11.
21. A method for the treatment or prevention of an EMCR-CoV virus infection comprising providing an individual with a pharmaceutical composition according to
15 claim 20.
22. A method for the treatment or prevention of atypical pneumonia comprising providing an individual with a pharmaceutical composition according to claim 20.
- 20 23. A viral replicase encoded by an RNA sequence comprising the indicated sequences, or homologues thereof as depicted in figure 1.
24. A viral spike protein comprising the indicated amino acid sequence as depicted in figure 1, or a homologue thereof.
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- 25 25. A viral nuclear capsid protein encoded by an RNA sequence comprising the indicated sequence as depicted in figure 1 or a homologue thereof.
26. A viral nsp 3 or envelope protein encoded by an RNA sequence comprising the
30 indicated sequence as depicted in figure 1, or a homologue thereof.
27. A nucleic acid sequence which comprises one or more of the sequences coding for separte viral proteins as depicted in figure 1 or a nucleic acid sequence which can hybridise with any of these sequences under stringent conditions.